

## Appendix B

### NIST Information Technology Security Training Requirements

| Training Areas             | Manage | Acquire | Design & Develop | Implement & Operate | Review & Evaluate | Use     |
|----------------------------|--------|---------|------------------|---------------------|-------------------|---------|
| Laws & Regulations         | 2, 3   |         | 3                | 2, 3                | 3                 | 1, 2, 3 |
| Security Program           | 2, 3   |         | 3                | 1, 2, 3             | 3                 | 1, 2, 3 |
| Security Planning          | 2, 3   |         | 3                | 2, 3                | 3                 | 1, 2, 3 |
| Security Management        | 2, 3   |         | 3                | 2, 3                | 3                 | 1, 2, 3 |
| System Life Cycle Security | 2, 3   |         | 3                | 1, 2, 3             | 3                 | 1, 2, 3 |
| Initiation                 |        |         |                  |                     |                   |         |
| Development                |        |         |                  |                     |                   |         |
| Test & Evaluation          | 2, 3   | 3       | 2, 3             | 1, 2, 3             | 2, 3              | 1, 2, 3 |
| Implementation             | 2, 3   |         | 2, 3             | 1, 2, 3             | 2, 3              | 1, 2, 3 |
| Operations                 | 2, 3   | 3       | 2, 3             | 1, 2, 3             | 2, 3              | 1, 2, 3 |
| Termination                | 2, 3   |         | 2, 3             | 1, 2, 3             | 2, 3              | 1, 2, 3 |

| Training Areas  | Manage | Acquire | Design & Develop | Implement & Operate | Review & Evaluate | Use     |
|---|--------|---------|------------------|---------------------|-------------------|---------|
| Laws and Regulations                                    |        |         |                  |                     |                   |         |
| Federal Laws & Regulations                              | 2, 3   |         |                  | 1, 2, 3             | 3                 | 1, 2, 3 |
| Federal Standards & Guidelines                          | 2, 3   |         |                  | 1, 2, 3             | 3                 | 1, 2, 3 |
| Legal & Liability Issues                                | 2, 3   |         | 3                | 1, 2, 3             | 3                 | 1, 2, 3 |
| Organization Policy, Guidelines, Standards & Procedures | 2, 3   | 3       | 3                | 1, 2, 3             | 2, 3              | 1, 2, 3 |
| Organization  | 2, 3   | 3       | 3                | 1, 2, 3             | 2, 3              | 1, 2,   |

| Training Areas                          | Manage | Acquire | Design & Develop | Implement & Operate | Review & Evaluate | Use   |
|---|--------|---------|------------------|---------------------|-------------------|-------|
| Program                                 |        |         |                  |                     |                   | 3     |
| <b>IT Security Program</b>              |        |         |                  |                     |                   |       |
| Organization-wide Program               | 3      | 3       | 3                | 1,2,3               | 2,3               | 1,2,3 |
| System-level Program                    | 2,3    | 3       | 3                | 1,2,3               | 2,3               | 1,2,3 |
| Elements of an IT Security Program      | 1,2,3  | 3       | 2,3              | 1,2,3               | 2,3               | 1,2,3 |
| Roles, Responsibility, & Accountability | 2,3    |         | 2,3              | 1,2,3               | 2,3               | 1,2,3 |
| <b>System Environment</b>               |        |         |                  |                     |                   |       |
| IT Architecture                         | 3      | 3       | 2,3              | 1,2,3               | 2,3               | 1,2,3 |
| Hardware Types                          | 3      | 3       |                  | 1,2,3               | 2,3               | 1,2,3 |
| Operating Software                      | 2,3    | 3       | 2,3              | 1,2,3               | 2,3               | 1,2,3 |
| Application Software                    | 2,3    | 2,3     | 2,3              | 1,2,3               | 1,2,3             | 1,2,3 |
| Communication Requirements              | 2,3    |         | 2,3              | 1,2,3               | 2,3               | 1,2,3 |
| Facilities Planning                     | 3      |         | 2,3              | 1,2,3               | 2,3               | 1,2,3 |
| Processing Workflow                     | 3      |         | 2,3              | 1,2,3               | 1,2,3             | 1,2,3 |
| Utility Software                        | 2,3    | 2,3     | 2,3              | 1,2,3               | 1,2,3             | 1,2,3 |
| Associated Threats                      |        |         |                  |                     | 1,2,3             |       |
| Associated Vulnerabilities              | 1,2,3  |         |                  |                     | 1,2,3             |       |
| <b>System Interconnection</b>           |        |         |                  |                     |                   |       |
| Communication Types                     | 2,3    | 3       | 3                | 1,2,3               | 2,3               | 1,2,3 |
| Network Architecture                    | 2,3    | 3       | 2,3              | 1,2,3               | 2,3               | 1,2,3 |

| <b>Training Areas</b>                       | <b>Manage</b> | <b>Acquire</b> | <b>Design &amp; Develop</b> | <b>Implement &amp; Operate</b> | <b>Review &amp; Evaluate</b> | <b>Use</b> |
|---|---------------|----------------|-----------------------------|--------------------------------|------------------------------|------------|
| Electronic Mail                             | 2, 3          | 3              | 2, 3                        | 1, 2, 3                        | 2, 3                         | 1, 2, 3    |
| Electronic Commerce                         | 2, 3          | 3              | 2, 3                        | 1, 2, 3                        | 2, 3                         | 1, 2, 3    |
| Access Controls (Firewalls, Proxies, etc.)  | 2, 3          | 3              | 2, 3                        | 1, 2, 3                        | 2, 3                         | 1, 2, 3    |
| Monitoring                                  | 2, 3          | 3              | 2, 3                        | 1, 2, 3                        | 2, 3                         | 1, 2, 3    |
| Cryptography                                | 2, 3          | 3              | 2, 3                        | 1, 2, 3                        | 2, 3                         | 1, 2, 3    |
| <b>Information Sharing</b>                  |               |                |                             |                                |                              |            |
| Communication Types                         | 2, 3          | 3              | 2, 3                        | 1, 2, 3                        | 2, 3                         | 1, 2, 3    |
| Network Architecture                        | 2, 3          | 3              | 2, 3                        | 1, 2, 3                        | 2, 3                         | 1, 2, 3    |
| Electronic Mail                             | 2, 3          | 3              | 2, 3                        | 1, 2, 3                        | 2, 3                         | 1, 2, 3    |
| Electronic Commerce                         | 2, 3          | 3              | 2, 3                        | 1, 2, 3                        | 2, 3                         | 1, 2, 3    |
| Access Controls (Firewalls, Proxies, etc.)  | 2, 3          | 3              | 2, 3                        | 1, 2, 3                        | 2, 3                         | 1, 2, 3    |
| Monitoring                                  | 2, 3          | 3              | 2, 3                        | 1, 2, 3                        | 2, 3                         | 1, 2, 3    |
| Cryptography                                | 2, 3          | 3              | 2, 3                        | 1, 2, 3                        | 2, 3                         | 1, 2, 3    |
| Data Ownership                              | 2, 3          | 3              | 2, 3                        | 1, 2, 3                        | 2, 3                         | 1, 2, 3    |
| Protection & Labeling of Data Storage Media | 1, 2, 3       | 2, 3           | 2, 3                        | 1, 2, 3                        | 2, 3                         | 1, 2, 3    |
| <b>Sensitivity</b>                          |               |                |                             |                                |                              |            |
| Confidentiality                             | 2, 3          |                | 2, 3                        | 1, 2, 3                        | 2, 3                         | 1, 2, 3    |
| Integrity                                   | 2, 3          |                | 2, 3                        | 1, 2, 3                        | 2, 3                         | 1, 2, 3    |
| Available                                   | 2, 3          |                | 2, 3                        | 1, 2, 3                        | 2, 3                         | 1, 2, 3    |
| Reliability                                 | 2, 3          |                | 2, 3                        | 1, 2, 3                        | 2, 3                         | 1, 2, 3    |

| <b>Training Areas</b>              | <b>Manage</b> | <b>Acqui<br/>re</b> | <b>Design<br/>&amp;<br/>Develo<br/>p</b> | <b>Impleme<br/>nt &amp;<br/>Operate</b> | <b>Review<br/>&amp;<br/>Evaluat<br/>e</b> | <b>Use</b> |
|------------------------------------|---------------|---------------------|--|---|---|------------|
| Criticality                        | 2, 3          |                     | 2, 3                                     | 1, 2, 3                                 | 2, 3                                      | 1, 2, 3    |
| Aggregation                        | 2, 3          |                     | 2, 3                                     | 1, 2, 3                                 | 2, 3                                      | 1, 2, 3    |
| <b>Risk Management</b>             |               |                     |  |   |   |            |
| Risk Assessment                    | 2, 3          | 3                   | 2, 3                                     | 1, 2, 3                                 | 2, 3                                      | 1, 2, 3    |
| Risk Analysis                      | 2, 3          | 3                   | 2, 3                                     | 1, 2, 3                                 | 2, 3                                      | 1, 2, 3    |
| Risk Mitigation                    | 2, 3          | 3                   | 2, 3                                     | 1, 2, 3                                 | 2, 3                                      | 1, 2, 3    |
| Uncertainty Analysis               | 2, 3          | 3                   | 2, 3                                     | 2, 3                                    | 2, 3                                      | 1, 2, 3    |
| Threats                            | 1, 2, 3       |                     | 2, 3                                     | 1, 2, 3                                 | 2, 3                                      | 1, 2, 3    |
| Weaknesses                         | 1, 2, 3       |                     | 2, 3                                     | 1, 2, 3                                 | 2, 3                                      | 1, 2, 3    |
| Vulnerabilities                    | 1, 2, 3       |                     | 2, 3                                     | 1, 2, 3                                 | 2, 3                                      | 1, 2, 3    |
| Risks                              | 1, 2, 3       |                     | 2, 3                                     | 1, 2, 3                                 | 2, 3                                      | 1, 2, 3    |
| Probability Estimation             | 2, 3          |                     | 2, 3                                     | 2, 3                                    | 2, 3                                      | 1, 2, 3    |
| Rate of Occurrence                 | 2, 3          |                     | 2, 3                                     | 2, 3                                    | 2, 3                                      | 1, 2, 3    |
| Asset Valuation                    | 2, 3          |                     | 2, 3                                     | 2, 3                                    | 2, 3                                      | 1, 2, 3    |
| Adequate & Appropriate Protection  | 2, 3          | 3                   | 12, 3                                    | 1, 2, 3                                 | 1, 2, 3                                   | 1, 2, 3    |
| Cost Effectiveness                 | 2, 3          |                     | 2, 3                                     | 1, 2, 3                                 | 2, 3                                      | 1, 2, 3    |
| Cost-Benefit Analysis              | 2, 3          |                     | 2, 3                                     | 1, 2, 3                                 | 2, 3                                      | 1, 2, 3    |
| Application Security Review/Audits | 2, 3          | 3                   | 2, 3                                     | 1, 2, 3                                 | 2, 3                                      | 1, 2, 3    |
| System Security Review/Audits      | 2, 3          | 3                   | 2, 3                                     | 1, 2, 3                                 | 2, 3                                      | 1, 2, 3    |
| Verification Reviews               | 2, 3          | 3                   | 2, 3                                     | 1, 2, 3                                 | 2, 3                                      | 1, 2, 3    |
| Internal Control                   | 2, 3          | 3                   | 2, 3                                     | 1, 2, 3                                 | 2, 3                                      | 1, 2, 3    |

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|---|---------------|---------------------|--|---|---|------------|
| Reviews                                       |               |                     |  |   |   |            |
| EDP Audits                                    | 2, 3          | 3                   | 2, 3                                     | 1, 2, 3                                 | 2, 3                                      | 1, 2, 3    |
| <b>Management Controls</b>                    |               |                     |  |   |   |            |
| System/Application Responsibilities           | 2, 3          |                     | 2, 3                                     | 1, 2, 3                                 | 2, 3                                      | 1, 2, 3    |
| Specific Policies & Procedures                | 2, 3          |                     | 2, 3                                     | 1, 2, 3                                 | 1, 2, 3                                   | 1, 2, 3    |
| Standard Operating Procedures                 | 2, 3          |                     | 2, 3                                     | 1, 2, 3                                 | 2, 3                                      | 1, 2, 3    |
| Personnel Security                            | 2, 3          |                     | 2, 3                                     | 1, 2, 3                                 | 2, 3                                      | 1, 2, 3    |
| System Rules of Behavior                      | 2, 3          |                     | 2, 3                                     | 1, 2, 3                                 | 2, 3                                      | 1, 2, 3    |
| Sanctions or Penalties for Violations         | 2, 3          |                     | 2, 3                                     | 2, 3                                    | 2, 3                                      | 1, 2, 3    |
| <b>Acquisition &amp; Development Controls</b> |               |                     |  |   |   |            |
| Life Cycle Planning                           | 2, 3          |                     | 2, 3                                     | 1, 2, 3                                 | 2, 3                                      | 1, 2, 3    |
| Security Activities in Life Cycle Stages      | 2, 3          | 3                   | 2, 3                                     | 1, 2, 3                                 | 2, 3                                      | 1, 2, 3    |
| Security Plan Development & Maintenance       | 2, 3          | 3                   | 2, 3                                     | 1, 2, 3                                 | 2, 3                                      | 1, 2, 3    |
| Security Specifications                       | 2, 3          | 3                   | 2, 3                                     | 1, 2, 3                                 | 2, 3                                      | 1, 2, 3    |
| Configuration Management                      | 2, 3          |                     | 2, 3                                     | 1, 2, 3                                 | 2, 3                                      | 1, 2, 3    |
| Change Control Procedures                     | 2, 3          |                     | 2, 3                                     | 1, 2, 3                                 | 2, 3                                      | 1, 2, 3    |
| Design Review & Testing                       | 3             |                     | 3  | 2, 3                                    | 2, 3                                      | 1, 2, 3    |
| Certification & Accreditation                 | 2, 3          | 3                   | 2, 3                                     | 2, 3                                    | 2, 3                                      | 1, 2, 3    |

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|---|---------------|----------------|-----------------------------|--------------------------------|------------------------------|------------|
| Acquisition Specifications                      | 3             | 3              | 2,3                         | 2,3                            | 2,3                          | 2,3        |
| Contracts, Agreements & Other Obligations       | 2,3           | 3              | 2,3                         | 2,3                            | 2,3                          | 1,2,3      |
| Acceptance Testing                              | 3             | 3              | 2,3                         | 2,3                            | 2,3                          | 2,3        |
| Prototyping                                     | 3             | 3              | 3                           | 2,3                            | 2,3                          | 2,3        |
| <b>Operational Controls</b>                     |               |                |                             |                                |                              |            |
| Physical & Environmental Protection             | 2,3           | 3              | 2,3                         | 1,2,3                          | 2,3                          | 1,2,3      |
| Production, I/O Controls                        | 2,3           |                | 2,3                         | 1,2,3                          | 2,3                          | 1,2,3      |
| Contingency Planning                            | 2,3           |                | 2,3                         | 1,2,3                          | 2,3                          | 1,2,3      |
| Audit & Variance Detection                      | 2,3           | 2,3            | 2,3                         | 1,2,3                          | 2,3                          | 1,2,3      |
| Hardware & System Software Maintenance Controls | 2,3           | 2,3            | 2,3                         | 1,2,3                          | 2,3                          | 1,2,3      |
| Application Software Maintenance Controls       | 2,3           | 2,3            | 2,3                         | 1,2,3                          | 2,3                          | 1,2,3      |
| Documentation                                   | 2,3           | 2,3            | 2,3                         | 1,2,3                          | 2,3                          | 1,2,3      |
| <b>Technical Controls</b>                       |               |                |                             |                                |                              |            |
| User Identification & Authentication            | 2,3           |                | 2,3                         | 1,2,3                          | 2,3                          | 1,2,3      |
| Authorization/Access Controls                   | 2,3           | 3              | 2,3                         | 1,2,3                          | 2,3                          | 1,2,3      |
| Integrity/Validation Controls                   | 2,3           | 3              | 2,3                         | 1,2,3                          | 2,3                          | 1,2,3      |

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|--------------------------|---------------|----------------|-----------------------------|--------------------------------|------------------------------|------------|
| Audit Trail Mechanisms   | 2, 3          | 2, 3           | 2, 3                        | 1, 2, 3                        | 2, 3                         | 1, 2, 3    |
| Confidentiality Controls | 2, 3          |                | 2, 3                        | 1, 2, 3                        | 2, 3                         | 1, 2, 3    |
| Incident Response        | 2, 3          | 3              | 2, 3                        | 1, 2, 3                        | 2, 3                         | 1, 2, 3    |
| Public Access Controls   | 2, 3          | 3              | 2, 3                        | 1, 2, 3                        | 2, 3                         | 1, 2, 3    |
| Protection Requirements  | 2, 3          | 3              | 2, 3                        | 1, 2, 3                        | 2, 3                         | 1, 2, 3    |
|                          |               |                |                             |                                |                              |            |